

Serial No. 09/459,984
Amdt. Dated October 13, 2004
Reply to Office Action of July 13, 2004

Docket No. K-0129

REMARKS/ARGUMENTS

Claims 1-30 are pending in the application. By the Amendment, claims 1, 13, 20, and 29 are amended. It is believed that no new matter is introduced in the application. Support for the claims can be found throughout the original specification, including the original claims, and the drawings. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Applicant gratefully acknowledges the indication in the Office Action, at page 3, that claim 20 contains allowable subject matter. For at least the following reasons, Applicant respectfully submits that claim 20 is in condition for allowance.

The Office Action, at page 2, rejects claims 1 and 13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Office Action asserts the claims recite subject matter which allegedly is not described in the specification in such a way as to reasonably convey that Applicant had possession of the claimed invention at the time of filing. Specifically, the Office Action asserts that the recitation in claim 1 of “by assigning channels to user application, wherein multiple user applications can be assigned to a channel, ...” and a similar recitation in claim 13 are not supported by the disclosure. The rejection is respectfully traversed for at least the following reasons.

Claim 1 is directed to an apparatus for multiplexing a line, that includes, *inter alia*, features of a plurality of conversion processors which are configured to demodulate a routed interim modulated signal to create a secondary original signal based on the type of communication

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signal, wherein secondary original signals of multiple user applications can be assigned to a channel. Claim 13 is directed to a data transmission method that includes, *inter alia*, demodulating an interim modulated signal with a demodulator having a path set to correspond with the determined type of communication signal, wherein a channel can simultaneously transmit demodulated signals of more than one user application. Applicant respectfully submits that such features are supported in the present application.

For example, at page 2, line 11 – page 3, line 4, the present application discloses that disadvantages of the related art include limited channel capacity related to use of a time division multiplexing (TDM) mode. Accordingly, it is a stated objective of the present invention to provide overall data capacity increase without a need to increase individual channel capacity. (Page 3, lines 11-14). An exemplary embodiment of the present invention is disclosed at page 11, line 20 – page 12, line 8, in which a digital signal is demodulated to the original analog signal, such that if the digital signal of 64 Kbps is then demodulated to the analog signal of 8 Kbps, then eight “users can simultaneously use one channel.” In this manner, advantages of some embodiments of the present invention include an increase in “overall channel capacity greatly without increasing individual channel capacity.” (Page 14, line 5). Withdrawal of the rejection is thus respectfully requested.

As the Office Action fails to set forth a rejection of independent claims 1 and 13 over the cited art, Applicant respectfully submits that claim 1 and 13 are in condition for allowance. Claims 2-11, 14-19, and 21-28 ultimately depend from claims 1 and 13, respectively, and thus are

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allowable for at least the same reasons, as well as additional patentable features recited therein and the combinations thereof.

The Office Action, also at page 2, rejects claim 20, 29, and 30 under 35 U.S.C. § 112, second paragraph, as indefinite. The rejection is respectfully traversed for at least the following reasons.

Claim 20 is directed to a data transmission method that includes, *inter alia*, features of processing signals transmitted from a demultiplexing processor using a main controller coupled to the demultiplexing processor, and modulating the processed signals based on a type of the communication signal and then demodulating the modulated signals using one of a plurality of conversion processors to transmit the signals respectively to a corresponding user application.

Claim 20 further recites that each of the plurality of conversion processors is coupled to the main controller and a corresponding user application, and each of the plurality of conversion processors comprises a first demodulator/modulator configured to modulate a first type of communication signal provided from the main controller, a second demodulator/modulator configured to modulate a second type of communication signal provided from the main controller, and a third demodulator/modulator configured to modulate a third type of communication signal provided from the main controller. Applicant respectfully submits that support for such features can be found, for example, at page 9, lines 3-20, and Figure 2.

As disclosed therein, embodiments of the present invention include conversion processors 100a – 100n that include a modulating/demodulating portion 180 that can modulate

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signals provided from the main controller 300, as shown (e.g., by connecting lines) in Figure 2. It is further disclosed that the demodulating/modulating portion 180 can include a first demodulator/modulator 140 that can modulate an incoming voice signal, a second demodulator/modulator 150 that can modulate an incoming facsimile signal provided, and a third demodulator/modulator 160 that can modulate an incoming data signal provided from the main controller 300.

For at least the above reasons, Applicant respectfully submits that independent claim 20 is in condition for allowance. Claims 29 and 30 ultimately depend from claim 20 and thus are allowable for at least the same reasons, as well as additional patentable features recited therein and the combination thereof. Withdrawal of the rejection is thus respectfully requested.

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CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Carol L. Druzbick, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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